REMARKS

Claims 17-33 are currently pending, with claim 17 being the only independent claim. Claim 17 has been amended. No new matter has been added. Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

Claims 17-33 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,807,633 ("*Fry*") in view of U.S. Pub. No. 2002/0077627 ("*Johnson*"). For the following reasons, reconsideration and withdrawal of this rejection are respectfully requested.

Independent claim 17 has been amended to recite the steps of "generating a sound signal in the target region non-invasively by radiating said sound signal from a sound emitter in response to a pressure-time signal such that a pressure-time course of said sound signal in the target region is non-sinusoidal and such that a magnitude of a pressure amplitude of said sound signal in the target region is larger than an expansion amplitude of said sound signal in the target region" and "adapting the pressure-time signal such that the pressure-time course of said sound signal in the target region is adapted to a specific utilization of non-linear propagation and attenuation properties of the material in the target region such that the non-invasively produced local temperature increase in the target region of the body of material produced by the adapted pressure-time signal is greater than a temperature increase produced by a sinusoidal pressure-time signal having the same power". No new matter has been added. The combination of the cited art fails to teach or suggest these limitations.

Fry relates to a "method and apparatus for non-invasive thermometry". *Fry* discloses that ultrasound beams can be used to increase the temperature of a tumor to destroy it. However, *Fry* also discloses that the temperature of tissue being heated must be carefully controlled. *Fry* is concerned with interrogating a tissue with an ultrasound interrogating beam to determine the

temperature of the tissue being treated. Accordingly, the sound signals described by *Fry* are not ultrasound beams that increase the temperature. Rather, the ultrasound beams discussed in *Fry* are ultrasound interrogating beams which determine the temperature rise in the tissue being heated. There is no teaching or suggestion in *Fry* that a sound signal is generated in the target region non-invasively by radiating sound signals from a sound emitter. *Fry* shows a plurality of emitters. However, each emitter generates a single beam to provide non-invasive tissue thermometry.

Indeed, the Examiner acknowledges that *Fry* fails to teach or suggest the specific properties of the recited sound signal, and cites *Johnson* to provide what *Fry* lacks. However, *Johnson* fails to teach or suggest *at least* the step of "generating a sound signal in the target region non-invasively by radiating said sound signal from a sound emitter such that a pressure-time course of said sound signal in the target region is non-sinusoidal and such that a magnitude of a pressure amplitude of said sound signal in the target region is larger than an expansion amplitude of said sound signal in the target region", because the signals in *Johnson* are <u>not</u> generated for the same reason as the claimed invention.

Johnson (paragraph [0004], lines 3-7) explains that "[t]he method includes providing an impedance measurement apparatus having a plurality of resilient members deployable with curvature and configured to sample tissue impedance through a plurality of conductive pathways". *Johnson* (paragraph [0004], lines 12-16) additionally explains that "[t]he impedance array is then utilized to make impedance measurements through a plurality of conductive pathways. Information from the impedance measurements is then utilized to determine a tissue condition of the sample volume". *Johnson* thus teaches that multiple signals are used to measure sample tissue <u>impedance</u>.

According to *Johnson*, "[t]he method can be configured to detect, locate and identify tumorous tissue at a selected tissue site using impedance measurements such as multi-pathway measured impedance, complex impedance and impedance vector measurements" (see paragraph [0005], lines 1-5). The whole point of locating the tumors in this manner is to provide a surgeon with a way "to monitor a target tissue site and control the course of ablative therapy before during or after the delivery of ablative energy or other treatment to the tissue site" (see paragraph [0005], lines 12-14).

Johnson (paragraph [0006], lines 6-8) explains that an impedance array is deployed and used to measure impedance, "including complex impedance and capacitance through one or more conductive pathways". According to *Johnson*, "[t]his information could be analyzed by coupled logic resources and then utilized to locate the position of and borders of the tumor volume and/or identify the tumor or tissue type. Also the information could be processed by the logic resources or other processing means to generate an image of the tissue site including the tumor volume which could utilize the locus of impedance as a way to indicate the center of the tumor mass or otherwise visually enhance the detection and display of the tumor mass. This information could then be used to position the energy delivery device to produce the desired ablation volume. Once the energy delivery device was positioned, the impedance array could then be utilized to monitor and/or control the delivery of ablative energy or therapy to the tumor volume including monitoring the size and shape of a developing ablation volume in relation to size and location of the tumor volume". Thus, it is clear that the multiple signals that are generated in *Johnson* are for measuring the impedance of a tumor or other material within the body of a patient.

Johnson also fails to disclose "the non-invasively produced local temperature increase in the target region of the body of material produced by the adapted pressure-time signal is greater

than a temperature increase produced by a sinusoidal pressure-time signal having the same power" as also recited in independent claim 17.

Johnson (paragraph [0004], lines 16-18) expressly states that "[e]nergy is then delivered from the energy delivery device to ablate or necrose at least a portion of the tumor". However, there is nothing in *Johnson* with respect to the properties of the energy that is delivered to the tumor or material. *Johnson* thus fails to teach or suggest the generating and adapting steps of independent claim 17, where "the pressure-time course of said sound signal in the target region is adapted to a specific utilization of non-linear propagation and attenuation properties of the material in the target region such that the non-invasively produced local temperature increase in the target region of the body of material produced by the adapted pressure-time signal is greater than a temperature increase produced by a sinusoidal pressure-time signal having the same power". The combination of *Fry* and *Johnson* thus fails to achieve the expressly recited subject matter of independent claim 17.

In view of the foregoing, reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) are in order, and a notice to that effect is requested.

In view of the patentability of independent claim 17, dependent claims 18-33 are also patentable over the prior art for the reasons set forth above, as well as for the additional recitations contained therein.

Based on the foregoing remarks, this application is in condition for allowance. Early passage of this case to issue is respectfully requested.

Should the Examiner have any comments, questions, suggestions, or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

Respectfully submitted,
COHEN PONTANI LIEBERMAN & PAVANE LLP

By _____

Alfred W. Froebrich
Reg. No. 38,887
551 Fifth Avenue, Suite 1210
New York, New York 10176
(212) 687-2770

Dated: May 11, 2009